



Fax Cover Sheet

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U.S. Serial No.: 09/417,507
Attorney's Docket No.: PATH99-10
Title: Nucleic Acid and Amino Acid Sequence relating to Aspergillus
Fumigatus for Diagnostics and Therapeutics
Inventors: Keith G. Weinstock and David Bush

Attached please find a copy of claims pages 8706-8709. If you have any questions, please do not hesitate to contact me.

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CLAIMS

1. An isolated nucleic acid comprising a nucleotide sequence encoding an *A. fumigatus* polypeptide selected from the group consisting of SEQ ID NO: 22157 - SEQ ID NO:
5 44266.
2. A recombinant expression vector comprising the nucleic acid of claim 1 operably linked to a transcription regulatory element.
- 10 3. A cell comprising a recombinant expression vector of claim 2.
4. A method for producing an *A. fumigatus* polypeptide comprising culturing a cell of claim 3 under conditions that permit expression of the polypeptide.
- 15 5. An isolated nucleic acid comprising a nucleotide sequence encoding an *A. fumigatus* polypeptide or a fragment thereof, said nucleic acid selected from the group consisting of SEQ ID NO: 1 - SEQ ID NO: 22156.
6. A recombinant expression vector comprising the nucleic acid of claim 5 operably
20 linked to a transcription regulatory element.
7. A cell comprising a recombinant expression vector of claim 6.
8. A method for producing an *A. fumigatus* polypeptide comprising culturing a cell
25 of claim 7 under conditions that permit expression of the polypeptide.

9. A probe comprising a nucleotide sequence consisting of at least eight contiguous nucleotides of a nucleotide sequence selected from the group consisting of SEQ ID NO: 1 - SEQ ID NO: 22156.

5 10. An isolated nucleic acid comprising a nucleotide sequence of at least eight nucleotides in length, wherein the sequence is hybridizable to a nucleic acid having a nucleotide sequence selected from the group consisting of SEQ ID NO: 1 - SEQ ID NO: 22156.

10 11. A vaccine composition for prevention or treatment of an *A. fumigatus* infection comprising an effective amount of a nucleic acid of claim 5 and a pharmaceutically acceptable carrier.

12. A vaccine composition of claim 11, further comprising an adjuvant.

15 13. A vaccine composition of claim 11, further comprising one or more additional active ingredients.

14. A method of treating a subject for *A. fumigatus* infection comprising administering to a subject a vaccine composition of claim 11, such that treatment of *A. fumigatus*
20 infection occurs.

15. A method of claim 14, wherein the treatment is a prophylactic treatment.

16. A method of claim 14, wherein the treatment is a therapeutic treatment.

17. A recombinant or substantially pure preparation of an *A. fumigatus* polypeptide or a fragment thereof, wherein said polypeptide is selected from the group consisting of SEQ ID NO: 22157 - SEQ ID NO: 44266.

5 18. A vaccine composition for prevention or treatment of an *A. fumigatus* infection comprising an effective amount of an *A. fumigatus* polypeptide of claim 17 and a pharmaceutically acceptable carrier.

19. A vaccine composition of claim 18, further comprising an adjuvant.

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20. A vaccine composition of claim 18, further comprising one or more additional active ingredients.

21. A method of treating a subject for *A. fumigatus* infection comprising
15 administering to a subject a vaccine composition of claim 18, such that treatment of *A. fumigatus* infection occurs.

22. A method of claim 21, wherein the treatment is a prophylactic treatment.

20 23. A method of claim 21, wherein the treatment is a therapeutic treatment.

24. A method for detecting the presence of a *Aspergillus* nucleic acid in a sample comprising:

(a) contacting a sample with a nucleic acid of claim 5 under conditions in
25 which a hybrid can form between the probe and a *Aspergillus* nucleic acid in the sample; and

(b) detecting the hybrid formed in step (a), wherein detection of a hybrid indicates the presence of a *Aspergillus* nucleic acid in the sample.

25. A computer readable medium having recorded thereon the nucleotide sequences depicted in SEQ ID NO: 1 - SEQ ID NO: 22156 or fragments thereof.

26. A computer based system for identifying fragments of the *Aspergillus* genome of commercial importance comprising the following elements;

- a) a data storage means comprising the nucleotide sequences SEQ ID NO: 1 - SEQ ID NO: 22156 or fragments thereof,
- b) a search means for comparing a target sequence to the nucleotide sequences of the data storage means of step (a) to identify homologous sequences, and;
- c) a retrieval means for obtaining said homologous sequences(s) of step (b).

27. A method of identifying commercially important nucleic acid fragments of the *Aspergillus* genome comprising the step of comparing a database comprising the nucleotide sequences SEQ ID NO: 1 - SEQ ID NO: 22156 or fragments thereof with a target sequence to obtain a nucleic acid molecule comprised of a complementary nucleotide sequence to said target sequence, wherein said target sequence is not randomly selected.

28. A method for identifying an expression modulating fragment of the *Aspergillus* genome comprising the step of comparing a database comprising the nucleotide sequences SEQ ID NO: 1 - SEQ ID NO: 22156 or fragments thereof with a target sequence to obtain a nucleic acid molecule comprised of a complementary nucleotide sequence to said target sequence, wherein said target sequence comprises sequences known to regulate gene expression.